The differential effects of labelling: How do 'dyslexia' and 'reading difficulties' affect teachers' beliefs

Simon Gibbs[1] *& Julian Elliott*[2]

In press. *European Journal of Special Needs Education.*

[1] Corresponding author: ECLS, KGVI Building, Newcastle University, NE1 7RU, UK. Email: simon.gibbs@ncl.ac.uk; Tel: +44 191 208 6575
[2] Professor of Education
Durham University
South Road
Durham DH1 3LT
United Kingdom
email: joe.elliott@dur.ac.uk; Tel: +44 191 334 5000

Abstract

This paper reports a survey of primary school teachers' beliefs about working with poor readers. The primary research question was: 'Does the way difficulties with reading are labelled affect the teachers' beliefs about their ability to intervene effectively?'

An opportunity sample of teachers was surveyed using 2 questionnaires. One examined teachers' efficacy beliefs. The second questionnaire assessed the extent to which teachers considered that difficulties with reading formed a clearly defined category with essentialist characteristics. There were two variants of both questionnaires. In variant A the word 'dyslexia' was used. In variant B that term was replaced by the phrase 'reading difficulties'.

The findings indicated that labels were associated with differences in teachers' efficacy beliefs. Responses to the 'dyslexia' variants suggested that teachers' sense of efficacy was associated with beliefs that dyslexia was an immutable phenomenon that yields viable inferences, and that efficacy beliefs were not uniformly associated with experience. In contrast the 'reading difficulty' items evoked responses that indicated that all aspects of teachers' efficacy beliefs about intervening were related to greater experience and only marginally related to essentialist beliefs about reading difficulties.

Keywords*: labelling; dyslexia; teachers; efficacy; essentialism*

Introduction

The work reported here examined the relationship between conceptual labels and beliefs about practice (Foroni & Rothbart, 2011; Rothbart, Davis-Stitt, & Hill, 1997).

The investigation was motivated by theoretical and practical concerns. The theoretical basis for the study lay in a proposed interaction between teachers' beliefs about the essence of what has been posited as a discrete and at least partially socially constructed category of difficulties with literacy (Elliott & Grigorenko, 2014) and teachers' beliefs in their ability to intervene effectively.

Practically, it is evident that the pupils of teachers who have a positive belief in their efficacy are more likely to do well in school (Tschannen-Moran, Hoy, & Hoy, 1998). Teachers' beliefs about the essence of children's difficulties (for instance with literacy) may also influence their sense of professional responsibility for specific groups of children (Jordan & Stanovich, 2003, 2004; Stanovich & Jordan, 1998). In order to help improve the quality and effectiveness of teaching, a primary concern is, therefore, to develop better understanding of the grounds for and operation of, teachers' efficacy beliefs in relation to children's literacy (Tschannen-Moran & Johnson, 2011).

The study of teachers' essentialist beliefs about 'dyslexia' or 'reading difficulties' is, therefore, important because the phenomena that are described as 'dyslexia' are almost certainly the product of the interaction between biological (genetic) mechanisms, psycho-social and cultural processes (eg differences in oral language) and societal responses to these issues (Elliott & Grigorenko, 2014; Lopes, 2012; Pennington & Olson, 2005).

While there is clearly a biological component in most cases of complex reading difficulty, there is an important relationship with the individual's environment that is often overlooked. As Lopes (2012, p. 226) has said

'In the end, it is perplexing that a teaching/learning issue [reading problems] *became a biological or genetic issue, when in a real sense almost everything about it is cultural: the code that must be learned is a cultural product, the context where it is learned (the school) is a product of the social organization; the social relationships (teaching/learning) that produce it are also cultural; and it does not depend on development but on an intentional social act (teaching). Finally, this perspective reinforces teachers', schools' and educational administrators' beliefs that poor reading is not their problem but a problem in the students' brains.'*

A fundamental premise for the present study, therefore, was (and remains) that the categorisation of reading difficulties is, in part, an artefact of social processes. However, while the process and outcomes of social categorisation and essentialist beliefs have been rigorously investigated in relation to certain domains, to date this has not included much work in the field of education.

Essentialist beliefs

The central idea of psychological essentialism is that 'People act as if things … have essences or underlying natures that make them the thing that they are' (Medin, 1989, p. 1476). Essentialist thinking entails a belief that social categories are discriminants of fundamentally (biologically) distinct groups of people (Prentice & Miller, 2007; Rothbart & Taylor, 1992). Rothbart and Taylor (1992) further suggested that essentialist thinking may affect perceptions of specific groups, and accentuate inter-group differences. The pervasive nature of essentialist thinking and the role of language in the cultural transmission of essentialist attributions (as outlined by Rhodes, Leslie, and Tworek, 2012) have implications for practitioners and administrators concerned about the potential for stereotyping and prejudice.

The relationship between essentialist beliefs and social categories vulnerable to stereotyping and prejudice have been further explored by Haslam and colleagues (Haslam & Levy, 2006; Haslam, Rothschild, & Ernst, 2000; Haslam, Rothschild, & Ernst, 2002). Cumulatively this work has substantiated a three-factor model of essentialist beliefs about how these are embedded in explanations about social phenomena and how essentialised social categories may become perceived as 'natural kinds' (Quine, 1977). The three dimensions of Haslam et al's model suggested that a social category has characteristics that are: biologically based, *immutable* and fixed early in life; historically *universal*; and that they have *inductive potential* (ie provide viable inferences on the basis of their discrete and informative defining features). Haslam and colleagues have also suggested that certain features of a category may be associated with (or evoke) theories about the nature of the category that exclude consideration of other possibilities. They also suggest that essentialist beliefs are akin to causal attributions and it is, therefore, possible that beliefs about a specific category may be causally linked to beliefs about the implications of that category and highlight perceived differences between 'in-' and 'out-'group members (Haslam, Rothschild & Ernst, 2000.

In line with the propositions offered by Jordan et al (2003, 2004), it seems plausible that people will adopt essentialist beliefs about disability in order to reduce uncertainty and personal responsibility. It has also been found that teachers who are uncertain about how best to respond to individual

children’s literacy difficulties may seek ‘closure’ as part of an aversion to ambiguity (Kruglanski & Webster, 1996; Roets & Van Hiel, 2011). These studies suggest that the need for closure may increase perceptions of group homogeneity and reliance on group-level information.

There seem to have been few systematic studies of the impact of essentialist views on teachers’ practice. One of the very few - a study of the ‘hurdles’ that obstructed inclusive science education (Southerland, Gallard, & Callihan, 2011) – recognised that while essentialist views provide an ‘uncomplicated’ picture that might seemingly ease work for teachers, they deny the wide and important variations within groups and are , therefore, misleading. Experimental studies have also shown that it is probable that information about children’s individual abilities is lost when their difficulties are categorised (Foroni & Rothbart, 2011, 2013; Rothbart et al., 1997 Indeed, one of the reasons for challenging the hegemony of dyslexia as an essentialised concept is that such categorisation of children provides no meaningful inferences for teachers about what to do when a child is identified as being ‘dyslexic’ above and beyond the use of practices that are recognised as suitable for anyone who struggles to decode text (Elliott & Grigorenko, 2014).

It is not the intention here to suggest that those deemed to have dyslexia inevitably suffer stigmatisation or segregation. Indeed, we recognise that the label ‘dyslexia’ can, for instance, be important in ensuring access to specialist services. It is, however, conceivable that essentialist views of groups of children (or ‘categories of special educational need’) may, through adherence to prejudicial beliefs or assumptions, undermine teachers’ preparedness to engage fully with inclusive education. In relation to teachers’ beliefs in their efficacy (Jordan & Stanovich, 2004; Tschannen-Moran & Johnson, 2011) it is possible that beliefs in the essentialist characteristics of certain groups undermine teachers’ beliefs that it is possible to support greater progress and/or achievement for children (Rhodes et al., 2012; Southerland et al., 2011).

The work of Elliott and colleagues (Elliott & Grigorenko, 2014; Elliot & Gibbs, 2008) has challenged the scientific validity of a discrete, uniform entity labelled ‘dyslexia’. Elliott & Grigorenko (2014) recommended that the term reading difficulties should be employed as a superordinate term to include a wide range of problems including accurate and fluent decoding and reading comprehension. To differentiate between these procedures they recommended the use of the term reading disability to describe decoding problems. This term describes an observable phenomenon (poor decoding) and offers no presumptions about differing aetiologies. Interventions for reading disability, they argued, should utilise techniques (e.g. structured phonics programmes) and approaches (e.g. response to intervention) that are best supported by the scientific literature.

However, in practice (in the UK at least) teachers use a range of labels for children who appear to have some form of difficulty with literacy. In practice these may typically include terms such as ‘dyslexia’ and ‘reading difficulties’. The former is enshrined in legislation as one of the ‘conditions’ encompassed by the term ‘Specific learning difficulties’ (DoH, 2014).The latter also still has some academic currency and has been used to include more diffuse, ‘non-specific’ or ‘garden variety’ difficulties (Stanovich, 1994; Stanovich & Stanovich, 1997). For our present purposes the terms ‘dyslexia’ and ‘reading difficulties’ were chosen as having legitimate face validity and currency for teachers.

Efficacy Beliefs

Efficacy beliefs have been postulated as domain / context specific (Bandura, 1997). A substantial body of work now attests to the effect of strong efficacy beliefs on outcomes for teachers and children (Caprara, Barbaranelli, Steca, & Malone, 2006; Ross, 1994; Tschannen-Moran et al., 1998). In terms of the domain and context specificity for teachers' efficacy beliefs most attention has been given to the nature of the task (eg teaching children to read) and the nature of the context (eg the demographics; available additional resources). For example, teachers' efficacy beliefs have been examined in relation to what skills might be required for children to learn to read - and how this may be taught (Tschannen-Moran & Johnson, 2011). Less attention appears to have been given to the nature of teachers' perceptions of the difficulties children experience and how those might be causally linked to practice. Thus, in most published work to date, notions of children's characteristics (ie the implied underlying causes of difficulty) have been specifically excluded (see, for instance, Timperley & Phillips, 2003). It is also worth considering what may be influences on or sources of relevant efficacy beliefs (see Klassen, Tze, Betts, & Gordon, 2011 for a discussion of this latter point). It is, therefore, important to consider how beliefs about the nature of the problem (the essential nature of the difficulties children might have) and what may be done about it (and teachers' beliefs in their efficacy in being able to do what might be most effective) may interact.

The overall aim of this investigation is, therefore, to illustrate the effect of any interaction between efficacy and essentialist beliefs and the implications this might have for teachers' practice and educational policy in regard to children's reading.

Method

Two questionnaires, each of two variants, A and B, were used to survey teachers' views. In variant A the word 'dyslexia' was used. In variant B, 'dyslexia' was replaced by the phrase 'reading difficulties'.

One questionnaire was intended to provide data relating to teachers' beliefs in their efficacy in providing appropriate interventions for children experiencing difficulty with the development of reading. The questions used were drawn from those published by Tschannen-Moran and Johnson (2011). The published questionnaire surveyed teachers' beliefs about their instructional efficacy in relation to children's reading and writing. Since our primary interest was the development of reading, the 14 questions that related specifically to reading were selected from the original 22 questions. Minimal adaptations were made to the wording of the questions to make the instrument suitable for administration in the UK. The final questionnaire was prefaced with a statement that read either: *'Here are some questions regarding your beliefs about teaching children who may be described as having dyslexia. Your answers are confidential'* or: '*Here are some questions regarding your beliefs about teaching children who may be described as having reading difficulties. Your answers are confidential.'*

Most questions were identical for both groups. Certain questions were, however, used to remind teachers of specific characteristics that children might be supposed to have. For instance: 'How much can you do to meet the needs of children with reading difficulties?' vs 'How much can you do to meet the needs of children with dyslexia?' and 'How much can you motivate children with reading difficulties?' vs 'How much can you motivate children with dyslexia?' All items in this questionnaire are shown in Table 1.

The second questionnaire was based on work by Haslam and Levy (2006). This was designed to establish the extent to which a social category (for groups of people that might be vulnerable to stereotyping and stigmatisation) was perceived as having 'essentialist' characteristics. The questionnaire used in the present study consisted of 12 questions prefaced with a statement that was varied systematically in a similar manner to that used in the first measure. The items are presented in Table 3.

The questionnaires were trialled with a small group of teachers in one primary school and some further adjustments were made in the light of their feedback. These informants did not participate in the subsequent study.

In order to avoid priming effects (that might be found associated with questions about the essential nature of dyslexia or reading difficulties), teachers in the main study were asked to respond to the questions about their efficacy beliefs first.

Sample

From all teaching staff in 23 primary schools in the NE of England an opportunity sample of 267 (59%) agreed to participate. Schools were matched by number on roll, number of children entitled to Free School Meals (FSM), and number of children labelled as having Special Educational Needs (ie with statements of special educational needs). All teachers in a school were invited to respond to one variant of the questionnaires. Teachers in the matching school were asked to complete the alternative variant.

146 (55%) teachers responded to the questionnaires with 'Dyslexia' as the key word; 128 Female; 9 Male; Mean Age: 39 years; Mean length of teaching experience 11.9 years (sd=8.9);

121 (45%) teachers responded to questionnaires with 'Reading Difficulties' as the key phrase; 93 Female; 5 Male; Mean age 39 years; Mean length of teaching experience 14.1 years (sd=9.5).

No statistically significant differences were found between these demographic characteristics.

Results

Factor analysis

In order to determine the underlying structure of responses to the two questionnaires exploratory factor analyses (using principal components analysis) were undertaken.

Efficacy beliefs

The Kaiser-Meyer-Olkin (KMO) coefficient (KMO=.90) indicated the data were suitable for EFA. An initial solution suggested 3 components with eigenvalues in excess of 1.0 that together accounted for 63.9% of the variance. The components were found to have moderate inter-correlations (r≙.4) and using both varimax and oblique rotation identical structures (though with slightly different loadings) were found. (The following table shows the loadings >.3 following oblique rotation.

(Table 1 about here)

These factors appear to have encapsulated three distinct aspects of teachers' approach to helping children who exhibit difficulties with reading. The first factor seemed to relate to teachers' beliefs in the ability to **Implement appropriate strategies and interventions**. The second factor was considered to represent beliefs in being able to adjust what teachers can do to **Motivate and engage children.** The third factor was considered to be about **Enabling (individuals and groups of) children to work together**. Because the scales were of different lengths scores on each scale were converted to proportions of their maximum (see Table 2, below).

(Table 2 about here)

A Manova was then undertaken to test for any significant difference in the perceived importance of these factors both within and between groups ('Dyslexia'; 'Reading Difficulties'). This showed a significant interaction of efficacy factors and group, ($F(2,260)=32.1$; $p<.001$). This suggests that the different labels for the supposed difficulty were associated with significant differences in teachers' reported efficacy beliefs. The results also indicate that when difficulties with reading were labelled as 'dyslexia' (rather than 'reading difficulties') teachers espoused significantly greater efficacy about implementing appropriate strategies, and enabling individual and groups of children; but significantly less efficacy motivating and engaging children.

Essentialist Beliefs

The KMO (.63) indicated that these data were also suitable for exploratory factor analysis. To enable comparisons to be made with Haslam & Levy's (2006) structure a 3 factor solution was requested. Following a preliminary analysis items 7 & 12 were deleted as they offered negligible loading on any factors. Since initial solutions also indicated significant inter-factor correlation, oblique rotation was used to provide the optimum solution. The resulting solution (presented below in Table 3) accounted for 54.4% of the variance:

(Table 3 about here)

Items 6, 5 and 8 in this measure (ie ¾ of the items loading on the first factor) correspond to items in Haslam & Levy's work that relate to '**Immutability**' (ie fixed, innate and biologically determined). While items 10 & 9 (ie ⅔ of the items loading on Factor 2) corresponded to Haslam & Levy' '**Universality**', it was thought that another apt title for this factor was '**Cultural Specificity**'; and items 3, 2,& 4 (ie Factor 3) corresponded to items in Haslam and Levy's '**Inductive Potential**'. Because the number if items loading on each factor differed, scores on the three scales were also converted to proportions of their maximum – see Table 4, below.

(Table 4 about here)

A Manova was subsequently conducted with Essentialism as the within subjects variable, and group ('dyslexia'/'reading difficulties') as the between subjects independent variable. The analysis revealed a significant interaction between Essentialist beliefs and Group: ($F=11.4$, $p<.001$). Thus for these teachers 'dyslexia' was perceived as significantly more immutable ($t=2.9$, $p=.005$) than 'reading difficulties'. Conversely 'dyslexia' appears to have been perceived as significantly less culturally

specific (ie more 'universal') than 'reading difficulties' (t=2.9, p=.004). All participants regarded both labels as providing equivalent inductive potential.

Relationship between efficacy and essentialist beliefs

Tests of the correlation of scores in the efficacy and essentialist factors proposed in relation to responses to the **'dyslexia'** questionnaires were undertaken with the following results (Table 5):

(Table 5 about here)

The same analysis was undertaken scores on the factors proposed for responses to the **'reading difficulties'** questionnaires (see table 6, below):

(Table 6 about here)

As might be expected, all efficacy factors were significantly inter-correlated with the exception of Factors 2 ('motivate and engage children') and 3 ('enable children to work together') for responses to 'dyslexia' items. It is also clear that in response to 'reading difficulty' items the correlation of efficacy and essentialism factors were almost always greater than might be expected by chance. The exception being the association of 'Immutability' - that did not show any significant correlation with any efficacy factors.

Stepwise Regression

In order to indicate how, as theorised, Efficacy Beliefs might be predicted by Essentialist Beliefs a series of stepwise regressions were undertaken. For each analysis each of the efficacy factors were in turn set as the dependent variable. In each regression the first variable to be entered was the number of years of teaching experience. That was followed by the remaining two efficacy factors (entered together in one step). Subsequently each Essentialist Belief factor was entered in succession. These analyses are summarised in the following table (Table 7, below) in which for clarity only relationships greater than might have been expected by chance are shown. For each of these the percentage of additional variance in the dependent variable accounted for by the entry of the specific predictor variable is shown:

(Table 7 about here)

Summary and Discussion

Analysis of factor scores revealed a significant interaction between efficacy and group ('dyslexia'; 'reading difficulties'), and between essentialism and group. When children were labelled as having 'dyslexia' teachers' beliefs in their efficacy were higher in two of the three efficacy factors. Pairwise comparison of the dimensions of teachers' essentialist beliefs indicated that 'dyslexia' was considered to be significantly more immutable and universal than 'reading difficulties'.

The stepwise regression of each efficacy factor showed significant effects of the dimensions of essentialist beliefs on specific aspects of efficacy beliefs when difficulties were labelled 'dyslexia' but

experience was only predictive of efficacy implementing strategies. Conversely, when the label was 'reading difficulties', teachers' experience and efficacy were more closely and consistently related. Further, for 'reading difficulties' only one aspect of essentialist beliefs ('cultural specificity') was found to be predictive of teachers' efficacy beliefs over and above the contributions of experience and the other components of efficacy. Thus, in summary, the present findings suggest the existence of an interaction between teachers' beliefs about the underlying 'essential' causal nature of difficulties with reading and their efficacy beliefs about helping children who might be struggling readers.

Teachers' responses to 'dyslexia' items

Teachers' efficacy beliefs regarding 'Implementing Strategies' for children with 'dyslexia' were predicted by their years of teaching experience and their beliefs in the essence of 'dyslexia' as being universal. The extent of their experience as teachers was not predictive of their efficacy with regard to motivating or enabling children with 'dyslexia'. Beliefs in their efficacy in motivating children were predicted by their beliefs in the immutability of 'dyslexia', and their beliefs in their efficacy in enabling children were predicted by their belief in the inductive potential of the label 'dyslexia'.

Teachers' responses to 'reading difficulty' items

When children were labelled as having 'reading difficulties', years of experience predicted all aspects of teachers' beliefs in their efficacy to intervene, motivate, and enable children. The evidence that teachers' efficacy beliefs about 'reading difficulties' were significantly lower than for 'dyslexia' appears at first sight to be counter to what we had expected on the basis of Jordan et al's findings (Jordan & Stanovich, 2003, 2004). It is possible that this reflects a confounding of the terms 'reading difficulties' and 'learning difficulties' although the present study was unable to resolve this issue. It was also apparent that the mean number of years' experience was lower for teachers responding to the 'dyslexia' items than for 'reading difficulties'. However, the correlations (see Tables 5, 6) and stepwise regressions of specific efficacy factors (reported in Table 7) suggest that experience accounted for a rather smaller proportion of the variance in any of the specific efficacy factors relating to 'dyslexia' than those for efficacy. Thus while teachers responding to 'dyslexia' items reported higher efficacy beliefs, the relation between experience and efficacy tended to be considerably weaker than was the case for those who responded to the 'reading difficulties' items.

Essentialist beliefs were only predictive of efficacy in dealing with 'reading difficulties' in respect of their 'cultural specificity'. However, beliefs in this essentialist factor were inversely related to each of the efficacy factors. Thus, in relation to the specific items in the questionnaire that were found to have loaded most significantly onto this factor it may be that efficacy beliefs were associated with beliefs that reading difficulties have always existed, they do not have clear or sharp boundaries, and they are not restricted to certain cultures.

Overall these findings highlight how the efficacy beliefs of the teachers in this study may have been differentially influenced. The findings also resonate with other studies (for instance those by Foroni & Rothbart, 2011; Jordan & Stanovich, 2003, 2004; Schwartz & Jordan, 2011; Rothbart, Davis-Stitt & Hill, 1997) showing how beliefs about the boundaries and inherent nature of categories may have

causal implications. The work of Jordan and colleagues in particular has demonstrated the inter-relationship of teachers’ beliefs about the nature of children’s special educational needs and their preconceptions about being able to help certain groups of children. This study extends that work into the domain of children’s literacy.

The present results also offer some endorsement of the findings of Lopes (2012) who reported that while about 70% of teachers surveyed thought that ‘dyslexia’ was rooted in children’s brains, 95% of respondents also thought that the problem could be overcome with adequate teaching. The evidence from the present study suggests that teachers faced with ‘dyslexia’ sustained beliefs in their efficacy as teachers whilst also espousing beliefs in the immutability (because of biological factors) and universality of the difficulties.

On the basis of the findings of this study we also wonder if ‘reading difficulties’ were typically perceived as an issue that teachers can expect to encounter and have developed beliefs about the efficacy of their intervention. ‘Dyslexia’, on the other hand, for us remains a complex, and puzzling construct. We wonder if the essentialist beliefs espoused by teachers enable them to more easily encapsulate their own frustration. From our personal contact with teachers (who often express their frustration and puzzlement about children who are failing to progress) it may well be (as Jordan and colleagues have described) that essentialist views prevail. As suggested by Roets and Van Hiel (2011) a ‘need for closure’ may be linked to the perceived inductive potential of a concept. It is also evident that judgements about individuals (eg what to do with a ‘dyslexic’) will be derived from inferred properties of the group. Thus ‘inductive use’ may be made of social categories ‘to reach swift and easy social judgements’ (Roets & Van Hiel, 2011, p. 56). However, it has been repeatedly shown that identification of ‘dyslexia’ does not in itself provide any clear basis for intervention (Elliott & Grigorenko, 2014). This study demonstrates that ‘dyslexia’ is more likely to evoke aspects of essentialism than ‘reading difficulties’. As we have discussed elsewhere in this paper essentialist beliefs are more likely to increase supposed distinctions between ‘in-‘ and ‘out-‘ group members and potentially obscure information about the specific strengths and weaknesses of individual group members (Foroni & Rothbart, 2011; Rothbart, Davis-Still & Hill, 1997; Southerland, Gallard & Callihan, 2011). From this perspective a conclusion would be that the label of ‘dyslexia’ is unhelpful to teachers. Further, as discussed by Haslam and Levy (2006) the essentialisation of social categories first risks reifying the category as a ‘natural kind’ and then legitimises unequal treatment. Certainly, ‘dyslexia’ legitimisation is already in place (in the UK at least) since it has already been categorised as a ‘disability’ (DoH, 2014).

While research has highlighted the most effective approaches for those who struggle to decode, there is no evidence of particular approaches that are more appropriate for a so-called dyslexic subgroup. It is plausible, therefore, that although efficacy might have been espoused (in order to close down uncertainty about what to do) such beliefs might have been self-serving and not associated with any subsequent development of efficacy (as seems to be the case with the present data). At present, however, this must remain a very tentative speculation that is not intended to be disrespectful of teachers and their beliefs.

Clearly this study has a number of limitations. These include the nature of the ‘sampling’ (lacking random selection) and the sample size. Both of these compromise the statistical analyses and all possible inferences.

The survey instruments also need further attention – particularly the questionnaire used to survey teachers' essentialist beliefs. The instrument used here was derived from studies of certain specific social categories - notably homosexuality and racism. As Haslam and colleagues have noted, essentialist beliefs should be regarded as being domain specific. While the present study has demonstrated that structural differences may be found, these may not adequately reflect the underlying structure of teachers' beliefs about the nature of children's problems in literacy. Following this initial study it is intended to undertake a larger scale, two phase investigation. In the first phase teachers and other relevant professionals (such as educational psychologists) will be interviewed about the nature of the difficulties some children experience with reading and how these might be defined. It is intended that findings from that first phase will be used as the basis of a questionnaire to be be used as part of a large scale replication of the study reported in the present paper.

It is, however, also possible that respondents have differing conceptions of the range of difficulty that might be encompassed by the terms 'reading difficulties' and 'dyslexia'. Thus, 'reading difficulties' might be used by teachers to discuss those with both very severe and minor problems. In the latter case, intervention might prove to be speedily effective. In contrast, 'dyslexia' might be understood as referring only to those with difficulties with reading that are both substantial and intractable. To add to the complexity, it is currently unclear to what extent problems involving reading comprehension, as opposed to decoding, were subsumed within the respondents' understandings of the terms examined. Further research might explore in more detail the types and range of reading problems that teachers associate with various reading-related labels.

Fundamentally, the present findings provide a potential challenge to the value, meaning and impact of certain labels that may be used as 'short-hand' descriptors for the difficulties that some children experience. We suggest that labels such as 'dyslexia' may be of illusory benefit in relation to teachers' efficacy beliefs. As such they may, therefore, be unhelpful to children's well-being and educational progress. Such a challenge is, however, based on the premise that the labels used ('dyslexia'; 'reading difficulties') did not signal totally different concepts. Further work should focus upon disaggregating such complexity.

References

Bandura, A. (1997). *Self-Efficacy: The exercise of control*. New York: Freeman.

Caprara, G. V., Barbaranelli, C., Steca, P., & Malone, P. S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of School Psychology, 44*(6), 473-490. doi: DOI: 10.1016/j.jsp.2006.09.001

DoH, D. (2014). *Special educational needs and disability code of practice: 0 to 25 years*. London: HMSO.

Elliott, J., & Grigorenko, E. L. (2014). *The Dyslexia Debate*. New York: Cambridge University Press.

Elliott, J. & Gibbs, S. (2008) Does dyslexia exist? Journal of Philosophy of Education 42, (3-4), 475-491

Foroni, F., & Rothbart, M. (2011). Category Boundaries and Category Labels: When Does a Category Name Influence the Perceived Similarity of Category Members? *Social Cognition, 29*(5), 547-576.

Foroni, F., & Rothbart, M. (2013). Abandoning a label doesn't make it disappear: The perseverance of labeling effects. *Journal of Experimental Social Psychology, 49*(1), 126-131. doi: http://dx.doi.org/10.1016/j.jesp.2012.08.002

Haslam, N., & Levy, S. R. (2006). Essentialist Beliefs About Homosexuality: Structure and Implications for Prejudice. *Personality and Social Psychology Bulletin, 32*(4), 471-485. doi: 10.1177/0146167205276516

Haslam, N., Rothschild, L., & Ernst, D. (2000). Essentialist beliefs about social categories. *British Journal of Social Psychology, 39*, 113-127.

Haslam, N., Rothschild, L., & Ernst, D. (2002). Are essentialist beliefs associated with prejudice? *British Journal of Social Psychology, 41*(1), 87-100. doi: 10.1348/014466602165072

Jordan, A., & Stanovich, P. J. (2003). Teachers' personal epistemological beliefs about students with disabilities as indicators of effective teaching practices. *Journal of Research in Special Educational Needs, 3*(1), no-no. doi: 10.1111/j.1471-3802.2003.00184.x

Jordan, A., & Stanovich, P. J. (2004). The Beliefs and Practices of Canadian Teachers about Including Students with Special Needs in their Regular Elementary Classrooms. *Exceptionality Education Canada 14*(2-3), 25-46.

Klassen, R., Tze, V., Betts, S., & Gordon, K. (2011). Teacher Efficacy Research 1998–2009: Signs of Progress or Unfulfilled Promise? *Educational Psychology Review, 23*(1), 21-43. doi: 10.1007/s10648-010-9141-8

Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind:" Seizing" and" freezing.". *Psychological review, 103*(2), 263.

Lopes, J. (2012). Biologising reading problems: the specific case of dyslexia. *Contemporary Social Science, 7*(2), 215-229. doi: 10.1080/21582041.2012.692098

Medin, D. L. (1989). Concepts and conceptual structure. *American psychologist, 44*(12), 1469.

Pennington, B. F., & Olson, R. K. (2005). Genetics of Dyslexia. In M. J. Snowling & C. Hulme (Eds.), *The science of reading: A handbook.* (pp. 453-472). Malden: Blackwell.

Prentice, D. A., & Miller, D. T. (2007). Psychological essentialism of human categories. *Current directions in psychological science, 16*(4), 202-206.

Quine, W. O. (1977). Natural kinds. In S. P. Schwartz (Ed.), Naming, necessity , and natural kinds (pp. 155±175). Ithaca, NY: Cornell University Press.

Rhodes, M., Leslie, S.-J., & Tworek, C. M. (2012). Cultural transmission of social essentialism. *Proceedings of the National Academy of Sciences, 109*(34), 13526-13531. doi: 10.1073/pnas.1208951109

Roets, A., & Van Hiel, A. (2011). The role of need for closure in essentialist entitativity beliefs and prejudice: An epistemic needs approach to racial categorization. *British Journal of Social Psychology, 50*(1), 52-73. doi: 10.1348/014466610X491567

Ross, J. (1994). *Beliefs that make a difference: The origins and impact of teacher efficacy*. Paper presented at the Annual meeting of the Canadian Association for Curriculum Studies, Calgary: Canada.

Rothbart, M., Davis-Stitt, C., & Hill, J. (1997). Effects of Arbitrarily Placed Category Boundaries on Similarity Judgments. *Journal of Experimental Social Psychology, 33*(2), 122-145. doi: http://dx.doi.org/10.1006/jesp.1996.1315

Rothbart, M., & Taylor, M. (1992). Category labels and social reality: Do we view social categories and natural kinds? In G. Semin & F. Fiedler (Eds.), *Language, interaction and social cognition* (pp. 11-36). London: Sage.

(Schwartz & Jordan, 2011) Schwartz, E., & Jordan, A. (2011). 14 Teachers' Epistemological Beliefs and Practices with Students with Disabilities and At-Risk in Inclusive Classrooms. *Personal Epistemology and Teacher Education, 61*, 210.

Southerland, S., Gallard, A., & Callihan, L. (2011). Examining Teachers' Hurdles to 'Science for All'. *International Journal of Science Education, 33*(16), 2183-2213. doi: 10.1080/09500693.2010.530698

Stanovich, K. E. (1994). Annotation: Does Dyslexia Exist? *Journal of Child Psychology and Psychiatry, 35*(4), 579-595. doi: 10.1111/j.1469-7610.1994.tb01208.x

Stanovich, K. E., & Stanovich, P. J. (1997). Further Thoughts on Aptitude/ Achievement Discrepancy. *Educational Psychology in Practice, 13*(1), 3-8. doi: 10.1080/0266736970130101

Stanovich, P. J., & Jordan, A. (1998). Canadian Teachers' and Principals' Beliefs and Inclusive Education as Predictors of Effective Teaching in Heterogeneous Classrooms. *The Elementary School Journal, 98*(3), 221-238.

Timperley, H. S., & Phillips, G. (2003). Changing and sustaining teachers' expectations through professional development in literacy. *Teaching and Teacher Education, 19*(6), 627-641. doi: Doi: 10.1016/s0742-051x(03)00058-1

Tschannen-Moran, M., Hoy, A. W., & Hoy, W. K. (1998). Teacher Efficacy: Its Meaning and Measure. *Review of Educational Research, 68*(2), 202-248. doi: 10.3102/00346543068002202

Tschannen-Moran, M., & Johnson, D. (2011). Exploring literacy teachers’ self-efficacy beliefs: Potential sources at play. *Teaching and Teacher Education, 27*(4), 751-761. doi: http://dx.doi.org/10.1016/j.tate.2010.12.005

Tables

Table 1: Factor loadings for teachers' efficacy beliefs

	Implement Strategies	Motivate Children	Enable Children
BT1 To what extent can you use a child's oral reading mistakes as an opportunity to teach effective reading strategies?	.888		
BT4 To what extent can you provide specific, targeted feedback to children during oral reading?	.812		
BT8 To what extent can you help children to read during oral reading?	.768		
BT3 To what extent can you adjust reading strategies for individual children based on ongoing informal assessments of children in your class?	.741		
BT9 To what extent can you demonstrate effective reading strategies?	.734		
BT2 To what extent can you use a variety of strategies to assess children's reading?	.708		
BT6 To what extent can you provide children with opportunities to apply their prior knowledge to reading?	.617		
BT11 To what extent can you help children figure out unknown words when they are reading?	.542		
BT7 To what extent can you help children monitor their own use of reading strategies?	.365		
BT10 How much can you do to adjust your reading materials to the proper level for children with reading difficulties / dyslexia ?		.914	
BT5 How much can you do to meet the needs of children with reading difficulties / dyslexia?		.905	
BT14 How much can you motivate children with reading difficulties / dyslexia ?		.706	
BT12 To what extent can you get children to talk with each other in class about books they are reading?			.920
BT13 To what extent can you use flexible grouping of the class to meet individual children's needs for reading instruction?			.826
Eigenvalues	5.63	3.45	3.00

Table 2: Mean proportions of maximum score in Efficacy Factors

	Supposed Difficulty	Mean	sd	N
Implement Strategies	Dyslexia	.84	.09	143
	Reading Difficulties	.77	.12	120
Motivate / Engage Children	Dyslexia	.71	.16	143
	Reading Difficulties	.75	.12	120
Enable Children	Dyslexia	.84	.15	143
	Reading Difficulties	.75	.15	120

All pairwise comparisons of means greater than chance.

Table 3: Factor loadings for teachers' essentialist beliefs

	Immutability	Cultural Specificity	Inductive Potential
BD6 Whether a child is a good reader or has reading difficulties / dyslexia is fixed early on in childhood	.771		
BD5 Reading difficulties / Dyslexia are / is caused by biological factors	.710		
BD8 Reading abilities are innate, genetically based tendencies	.614		
BD11 The proportion of children that have reading difficulties / dyslexia is roughly the same all over the world	.496		
BD10 Children with reading difficulties / dyslexia have probably existed throughout human history		-.747	
BD1 Reading ability is a category with clear and sharp boundaries: Children either are good readers or have reading difficulties / dyslexia		.730	
BD9 Children with reading difficulties / dyslexia probably only exist in certain cultures		.690	
BD3 Good readers and children with reading difficulties / dyslexia are not fundamentally different			.864
BD2 Children with reading difficulties / dyslexia have a necessary or defining characteristic			.451
BD4 Knowing that someone is a good reader tells you a lot about them			.409
Eigenvalues	2.05	2.02	1.5

Table 4: Mean proportions of maximum score in Essentialist Factors

	Supposed Difficulty	Mean	sd	N
Immutability	Dyslexia	.47	.16	140
	Reading Difficulties	.42	.12	119
Cultural Specificity	Dyslexia	.44	.09	140
	Reading Difficulties	.48	.13	119
inductive potential	Dyslexia	.48	.14	140
	Reading Difficulties	.48	.14	119

Pairwise comparison (with Bonferroni corrections) of means of ‘Immutability’ and ‘Cultural Specificity’ greater than chance.

Table 5: Coefficients of bivariate correlation of Efficacy and Essentialist beliefs about 'dyslexia'

	Implement Strategies	Motivate / Engage	Enable	Immutability	Culturally Specific	Discrete
Efficacy						
Implement Strategies	1.000					
Motivate / Engage	**.519****	1.000				
Enable	**.350****	.133	1.000			
Essentialism						
Immutability	**.216***	**.354****	.011	1.000		
Cultural Specificity	**-.206***	-.085	**-.186***	.141	1.000	
Inductive Potential	-.011	-.042	**.214***	**.187***	**.196***	1.000
Years of Teaching	**.171***	.089.	.021	**.**170	-.052	.077

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 6: Coefficients of bivariate correlation of Efficacy and Essentialist beliefs about 'reading difficulties'

	Implement Strategies	Motivate / Engage	Enable	Immutability	Culturally Specific	Inductive Potential
Efficacy						
Implement Strategies	1.000					
Motivate / Engage	**.811****	1.000				
Enable	**.712****	**.750****	1.000			
Essentialism						
Immutability	-.121	-.076	-.003	1.000		
Cultural Specificity	**-.272****	**-.300****	-.179	**.369****	1.000	
Inductive Potential	**-.208***	**-.256****	**-.275****	.126	**.263****	1.000
Years of Teaching	**.261****	**.373****	**.227***	-.173	**-.229***	**-.354****

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 7: Significant predictors on Efficacy. Figures are the %ge of additional variance in each Efficacy factor due to entry of IV in stepwise regression of DV (see text for details)

	Specific Efficacy factors	Years Teaching	Total Efficacy	Essentialism		
				Immutability	Cultural Specificity	inductive potential
Dyslexia	Implement Strategies	✓ 3%	✓ 20%		✓ 3%	
	Motivate / Engage		✓ 19%	✓ 6%		
	Enable		✓ 6%			✓ 4%
Reading Difficulty	Implement Strategies	✓ 6%	✓ 56%			
	Motivate / Engage	✓ 12%	✓ 61%		✓ 1%	
	Enable	✓ 5%	✓ 54%			

Schwartz, E., & Jordan, A. (2011). Teachers’ Epistemological Beliefs and Practices with Students with Disabilities and At-Risk in Inclusive Classrooms. In J. Brownlee, G. Schraw & D. Berthelsen (Eds.), *Personal Epistemology and Teacher Education* (pp. 210 - 226). Abingdon: Routledge.